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University of California, San Diego
JTO/ONR HEL MRI Quarterly Report Jan 2008

Project Title: Passive Imaging System for Measuring Atmospheric Scattering and CFLOS

Grant Number: N00014-07-1-1060

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1. Activities for Current Quarter, Nov 07 – Jan 08

Task 1: (Experimental test site)

Shop fabrication of the lower environmental housing for the visibility system was completed, and the lower housing has now been assembled and is running well under test. (This section includes the camera environmental control.) The upper housing components were designed. The parts were fabricated and went to anodize on 28 Jan. The rotary table arrived, and software has been written to initialize and control it. The rotary table logic and other program changes have been integrated into the MSI control software, which is now undergoing test and debug.

Task 2: (Weather at test site)

We have purchased the Vaisala point scatter meter, and it has arrived. The NPS team is nearly ready for deployment of their ground station.

Task 3: (Purchase IR system components)

Task 4: (Data analysis)

We evaluated the desired trade-offs between frequent horizon scans vs. frequent stops in a single horizon scan, and designed the data acquisition program accordingly.

Task 5: (Visibility algorithm)

(Tasks 6, 7, and 8 are not funded for year 1)

Task 8: (Research military needs)

For the long term, we would like a system that does not require a rotary table, and is thus cheaper and more robust. We have developed a mock-up of a design using rotating prisms that may enable this.

2. Events

3. Technical Results/Accomplishments

Task 1: (Experimental test site)

The MSI is nearing readiness for deployment.

Task 2: (Weather at test site)

The ground weather station is nearing readiness for deployment.

Task 3: (Purchase IR system components)

Task 4: (Data analysis)

Design for data control program was finished.

Task 5: (Visibility algorithm)

Tasks 6, 7, and 8 are not funded for year 1

Task 8: (Research military needs)

Mock-up of prism design completed.

4. Issues

We had expected the machine shop to deliver the lower housing in November and the upper in December. They fell well behind these deadlines, saying they would not be finished until mid-to-late February. As a result, in early January we moved the remaining parts to a different machine shop. Part fabrication is now complete, and the parts should be back from anodize within a day or two.

5. Activities for Upcoming Quarter: (Nov 07 – Jan 08)**Task 1: (Experimental test site)**

As soon as the upper housing parts are delivered from the shop, we plan to assemble the system, test and deploy it. We will also be completing testing of the first version of the MSI control (data acquisition) program during this interval.

Task 2: (Weather at test site)

The present schedule for deployment of the ground weather station is the week of Feb 11.

Task 3: (Purchase IR system components)**Task 4: (Data analysis)**

Once data acquisition begins, our first task will be evaluating flux levels, and setting the flux control on the instrument as required.

Task 5: (Visibility algorithm)

Tasks 6, 7, and 8 are not funded for year 1

Task 8: (Research military needs)**6. Cost Report**

The cost report will be sent by 10 February.

7. Milestone Status

Our first milestone for this year is to have the experimental site fielded six to seven months after contract, or in January 2008. Since we received permission to start in early August, this milestone became February. We believe we can achieve this milestone.

8. Summary

We are concentrating mainly on Tasks 1 and 2, because other tasks, such as data analysis, depend on completion of these tasks. We believe we are making reasonable progress.